Blind, Deaf, and Dumb: We Must Be Prepared to Fight for Information

A Monograph

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Abstract

Blind, Deaf, and Dumb: We Must Be Prepared To Fight for Information, by LTC Stephen M. Johnson, 35 pages.

The US Army's experience in combat over the last fifteen years demonstrated an inability to expose enemy intentions without forces on the ground. Currently, US Army corps commanders lack the ability to fight for information to gain the situational understanding necessary to seize and retain the initiative and set conditions for success across all phases of Joint Operations. To win in a complex world, the US Army corps requires a dedicated formation focused on reconnaissance operations that is equipped with lethal, survivable and operationally mobile platforms to seize and retain the initiative over enemy forces.

Continuous reconnaissance and security operations are essential to seizing, retaining, and exploiting the initiative. To avoid repeating the mistakes of the past, the US Army should remain grounded in doctrine when answering the question of how should US Army corps fight for information. The natural starting point for any solution should begin with the Fundamentals of Reconnaissance. The lack of survivability and firepower within the Stryker platform hinders its ability to retain freedom of maneuver and maintain contact. When a Reconnaissance Force becomes decisively engaged, reconnaissance stops, focus on the reconnaissance objective is lost, and the focus becomes survival. The ability to gain and maintain contact with the enemy on terms and conditions of their choosing is essential. Contact with the enemy provides the staffs with real-time information on the enemy's composition, disposition, location, actions and strength that allow the staff to make recommendations to the corps commander.

To provide US Army corps commanders the ability to fight for information and gain the situational understanding needed to seize and retain the initiative and set conditions for success across all phases of Joint Operations, the Army must provide a formation that is properly organized and equipped to take on the corps reconnaissance and security mission. The reconnaissance and security force must be a combined arms formation composed of the mobility, protection, and precision firepower that allow it to fight for understanding and identify opportunities to seize, retain, and exploit the initiative across all domains. A combination of Abrams Tanks, Bradley Fighting Vehicles, and Stryker Infantry Carrier Vehicles provides the commander with the most flexible formation capable of adapting to the complexity of the modern operational environment. When complimented with the homogeneous attack aviation, artillery, intelligence, protection, and sustainment elements the Reconnaissance Force is a lethal formation capable of seizing and retaining the initiative over enemy forces across all domains.

Contents

Acronyms

ADP   Army Doctrine Publication

ATP   Army Techniques Publication

BCT   Brigade Combat Team

BfSB   Battlefield Surveillance Brigade

DA   Department of the Army

FM   Field Manual

LRS   Long Range Surveillance

PAM   Pamphlet

PIR   Priority Information Requirement

R&S   Reconnaissance and Security

TRADOC   Training and Doctrine Command

Introduction

The history of US mechanized Reconnaissance Force is filled with transitions and transformations. These changes reflect the tension between powerful combined arms formations that are capable of much more than reconnaissance and security missions and less capable, lightly armed, and less survivable formations that are only capable of executing stealthy reconnaissance. It is common to find the former executing missions outside of their intended role of reconnaissance, while the latter are often relegated to rear area security because of their inability to fight for information results in their commanders' unwillingness to assume the risk of casualties associated with their intended role forward.

A force that is properly organized, trained, and equipped to fight for information to answer commanders' critical information requirements tends to be good at many other missions in addition to reconnaissance and security. The consequence of maintaining formations that excel at fighting for information is that some of the missions given to such formations fall outside of their intended purpose.[1] This unconventional employment makes the mechanized corps reconnaissance formation a target when the Army looks to reorganize the total force. The flexible, combined arms formation required to execute the corps reconnaissance and security mission does not fit in a typologically organized, pooled Army. The push for an efficient force where all the pieces within each unit are similar drives the Army to reexamine how it should fight for information.

The specialized corps cavalry regiment was a byproduct of the American infantry division redesign in 1939. Proving its worth during corps and field Army maneuvers, commanders at several levels requested their own reconnaissance units. These requests resulted in the organization of division and corps reconnaissance units. The Mechanized Cavalry Regiment of 1942 was a highly flexible organization that granted commanders a wide variety of options in the composition of reconnaissance detachments. The regiments made contact with scouts in jeeps and

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[1] E. David Wright, "Mechanized Cavalry Groups: Lessons for the Future of Reconnaissance and Surveillance," (Master's Thesis, Command and General Staff College, 2013), 9.

motorcycles using stealth. When the scouts were incapable of bypassing or destroying the enemy, tanks and assault guns maneuvered out of contact to destroy the threat.[2]

Similar to the 2012 deactivation of the Armored Cavalry Regiments and the introduction of the Battlefield Surveillance Brigades, a misinterpretation of the application of technology on the battlefield resulted in an emphasis on out of contact, stealthy reconnaissance in Training Circular 107 in 1943. Contrary to lessons learned in combat in North Africa, Lt. Gen. Lesley J. McNair, commander of The Army Ground Forces Requirements Division, focused reconnaissance units on infiltration tactics with less emphasis on combat. The new focus on stealthy reconnaissance allowed McNair to reorganize the regiments to facilitate the pooling of auxiliary battalions.[3] Like modern modular Brigade Combat Teams, the like battalions achieved efficiency through pooling, streamlining, and elasticity.[4] The newly gained efficiency came at a price. The new formations severed the habitual relationships and reduced the total strength of the mechanized cavalry regiments while, at the same time, the reliance on only stealthy reconnaissance denied corps and division commanders the ability to fight for information.

The Army repeated this mistake during modularization in 2012, by converting the only two remaining Armored Cavalry Regiments to Brigade Combat Teams.[5] While the transformation provided the Army like-sized Brigade Combat Teams to deploy to Iraq and Afghanistan, it also left corps commanders blind without the ability to fight for information. The Battlefield Surveillance Brigade failed to satisfy the reconnaissance gap because it was a small force that lacked lethal and survivable platforms. With only one reconnaissance squadron composed of two

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[2] Christopher Nixon Prigge, "Tradition and Transformation: The Origins of the U.S. Armored Cavalry Regiments," (PhD diss., Harvard University, 2011), 311, 367, 369-370.

[3] Prigge, 381-383.

[4] US Department of the Army, *Circular 256: Reorganization of Corps Headquarters and Organic Troops* (Washington, DC: Government Printing Office, 1943) 1-3.

[5] Heather Graham-Ashley, "3rd ACR Transitions to Strykers, Changes Name," III Corps and Fort Hood Public Affairs, last modified 2011, accessed November 9, 2016, https://www.Army.mil/article/70060/3rd_ACR_transitions_to_Strykers__changes_name.

troops with a total of four platoons and one Long Range Surveillance Company, the Battlefield Surveillance Brigade was hardly capable of fighting for information across a corps size area of operation. Additionally, the LRS primarily were a dismounted force capable of limited area reconnaissance, while the two troops were equipped with lightly armored Highly Mobile Multipurpose Wheeled Vehicles (HMMWV). The employment of a small poorly equipped force in the corps' deep area often exceeded the acceptable risk of the corps commanders. Ultimately, the Army converted the Battlefield Surveillance Brigades to Expeditionary Military Intelligence Brigades in 2015, leaving corps commanders with no reconnaissance formation at all.

Currently, US Army corps commanders lack the ability to fight for information to gain the situational understanding necessary to seize and retain the initiative and set conditions for success across all phases of Joint Operations. The Army does not currently have a dedicated formation that can fight for information at the corps level. The US Army's experience in combat over the last fifteen years demonstrated an inability to expose enemy intentions without forces on the ground. Our future adversaries, like our past enemies, will mask their intentions and disguise their capabilities until forced to reveal them by a US Army formation.

The Army is beginning to recognize its failure to organize, train, and equip the future Reconnaissance Force could result in the unnecessary deaths of US service members and potentially the loss of a war. In April of 2016, to provide corps commanders with the ability to fight for information, Forces Command tasked 1st Brigade, 4th Infantry Division to convert to the first Reconnaissance and Security Brigade Combat Team. However, the US Army must reexamine its historical mistakes concerning corps reconnaissance and commit to not repeating them. To win in a complex world, the US Army corps requires a dedicated formation focused on reconnaissance operations that is equipped with lethal, survivable, and operationally mobile platforms to seize and retain the initiative over enemy forces.

Methodology and Structure

As the Army experiments with new reconnaissance formations, the question that the Army should ask is, how should a US Army corps fight for information. The fundamentals, and required capabilities based on historical experience laid out in doctrine, should be the guide to building the future reconnaissance formation. The fundamentals of reconnaissance, when applied to the future operating environment in which a US Army corps could be employed, serve as criteria that a corps reconnaissance formation must satisfy. These criteria will aid in determining the appropriate organization, training, and equipment needed to win in a complex world.

To answer the question, how should a US Army corps fight for information, the Army needs to analyze corps level reconnaissance operations using historical examples, plausible future scenarios, and a risk analysis of organization, training, and material. The evidence required to answer this research question includes historical applications of corps level reconnaissance, plausible future scenarios in which corps level reconnaissance could be applied, and the current construction of the Reconnaissance and Security Brigade Combat Team. It is necessary to analyze the risk associated with existing and historical examples of reconnaissance and security operations' doctrine, organizations, training, and material; to identify hazards, potential mitigation measures, and their associated cost and benefit; to determine the optimum reconnaissance formation of the future. To analyze the potential risk to force associated with the current Reconnaissance and Security Brigade formation, the plausible future scenario described in section two identifies potential mitigation measures, and presents the cost and benefit associated with each solution. Applying the fundamentals of reconnaissance to current and prospective corps reconnaissance formations, assuming that a valid corps reconnaissance solution should be able to adhere to the fundamentals of reconnaissance, highlights the risk associated with potential organizing and equipping courses of action.

The monograph has four body sections and an introduction and a conclusion. The first section analyzes the fundamentals of reconnaissance as they apply to the Corps Reconnaissance Force. This section defines the expectations of a corps reconnaissance unit through the fundamentals of reconnaissance. Section two describes the future operating environment. This section includes analysis of historical situations in which corps reconnaissance operated and uses recent events, including the Ukraine crisis, to illustrate future conflict. Section three analyzes corps reconnaissance unit's organizations and equipping solutions to compare them to 1st Brigade 4th Infantry Division, determining how the Army should organize and equip the corps reconnaissance formation. Section four analyzes the recommendations from the employment of corps level reconnaissance units after World War II.

Doctrine

The Army Capstone Concept and the Army Operating Concept emphasize seizing and retaining the initiative using information collection to develop a situational understanding of the operational environment.[6] Continuous reconnaissance and security operations are essential to seizing, retaining, and exploiting the initiative.[7] Therefore, according to Annex B of the Operational and Organizational Concept for the Army of 2020, the ability to conduct effective reconnaissance and security operations is a key consideration for determining the organizational framework of the Army. Additionally, the Army must provide a force capable of executing reconnaissance and security operations throughout the range of operational environments across

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[6] TRADOC Pamphlet 525-3-0, *The US Army Capstone Concept* (Washington, DC: Government Printing Office, 2012), 20; Annex B: R&S BCT O&O (Evolution 3), *An Operational and Organizational Concept for the Army of 2020 (A2020 K-Series)* (Washington DC: Government Printing Office, 2016), B-4.

[7] TRADOC Pamphlet 525-3-1, *The US Army Operating Concept Win in a Complex World* (Washington, DC: Government Printing Office, 2014), 18.

the spectrum of operations.[8] At the same time, the Army recognizes that there is a significant capability gap and that it must improve its ability to fight for and exploit information.

The Battlefield Surveillance Brigade's failure to satisfy the reconnaissance and security demands of corps commanders and the resulting deactivation of the Battlefield Surveillance Brigades created an absence of a dedicated Reconnaissance Force at echelons above the brigade.[9] The lack of a dedicated force to conduct reconnaissance and security operations to develop the situation in close contact with the enemy is a mistake repeated throughout US Army history.[10] The recent conversion of both Armored Cavalry Regiments to Stryker Brigade Combat Teams and the inactivation of the Division Cavalry Squadrons was a significant error that ignored clearly articulated requirements laid out in doctrine. While an Armored Cavalry Regiment represented a square peg to the round holes created by the Army Force Generation Program, the US Army's experience in combat, reflected in doctrine, points to a clear demand for an organization capable of fighting for information. The transition to the Battlefield Surveillance Brigade and the reliance on stealthy reconnaissance and surveillance out of contact is remarkably similar to the Army's early experience of World War II. During the initial stages of the North African Campaign, doctrinally, US reconnaissance was executed by poorly armed and protected units, and therefore passive in nature. The lessons learned during World War II led to the rewriting of doctrine and the conclusion that reconnaissance operations required an offensive capability.[11] Similarly, the Battlefield Surveillance Brigade's focus on passive reconnaissance and surveillance resulted in their lack of employment and led to their inactivation, leaving corps commanders wanting for a dedicated reconnaissance and security formation capable of fighting for information.

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[8] Annex B: R&S BCT O&O (Evolution 3), B-4.

[9] TRADOC Pamphlet 525-3-0, 20.

[10] TRADOC Pamphlet 525-3-0, 20.

[11] US Forces General Board, European Theater, *Study Number 49: Mechanized Cavalry Units*, (Paris, France: General Board, European Theater, 1946), 14-15.; Wright, 14, 19.

During the 2014 Reconnaissance and Security Brigade Workshop, corps and division commanders universally agreed that the lack of a dedicated Reconnaissance Force organized and trained to execute reconnaissance and security operations, at the corps and division echelon, was a significant capability gap. According to Annex B of the Operational and Organizational Concept for the Army of 2020, "Brigade Combat Teams cannot adequately fill this gap because their current Mission Essential Task List, organization and equipment do not support the conduct of continuous reconnaissance and security operations at echelons above the brigade…The Army must provide the right combination of forces to enable commanders to seize and retain the initiative in a variety of operational environments through the range of military operations. Effective reconnaissance and security operations provide commanders with the information and situational understanding necessary to seize and retain the initiative over enemy forces."[12]

The conversion of 1st Brigade 4th Infantry Division to a Reconnaissance and Security Brigade Combat Team reflects the Army's attempt to provide corps commanders with the force that they need to gain and maintain the initiative. However, to avoid repeating the mistakes of the past, the US Army should remain grounded in doctrine when answering the question of how should US Army corps fight for information. The natural starting point for any solution should begin with the fundamentals. Fortunately, doctrine provides seven fundamentals of reconnaissance developed over centuries of combat experience. These seven fundamentals should be the cornerstone of any newly developed reconnaissance formation: ensure continuous reconnaissance, do not keep reconnaissance in reserve, orient on the reconnaissance objective, report information rapidly and accurately, retain freedom of maneuver, gain and maintain contact, and develop the situation rapidly.[13] These seven fundamentals serve as evaluation criteria towards determining how corps should fight for information. It is, therefore, essential that each

[12] Annex B: R&S BCT O&O (Evolution 3) An Operational and Organizational Concept for the Army of 2020, B-4 – B-5.

[13] Field Manual 3-90.2, *Reconnaissance, Security, and Tactical Enabling Tasks Volume 2* (Washington, DC: Government Printing Office, 2013), 1-2.

fundamental of reconnaissance be clearly understood. The current operating environment and Army inventory demand that the designers of the force place extra emphasis on the Reconnaissance Forces' ability to retain freedom of maneuver and gain and maintain contact.

The corps reconnaissance element must be capable of retaining freedom of maneuver. According to Army Doctrinal Publication 3-0 "maneuver is the employment of forces in the operational area through movement in combination with fires to achieve a position of advantage in respect to the enemy."[14] When a Reconnaissance Force becomes decisively engaged, reconnaissance stops, focus on the reconnaissance objective is lost, and the focus becomes survival. Battlefield maneuverability is essential to successful reconnaissance.[15] The Reconnaissance Force must continually balance the requirement to gain and maintain contact with the need to retain freedom of maneuver. The Reconnaissance Force achieves balance by avoiding a decisive engagement with a superior force while continuing to develop the situation. The Reconnaissance Force must be task organized in a manner that enables the maintenance of freedom of maneuver.[16] To maintain freedom of maneuver the force must be able to engage the enemy with multiple forms of contact and continue to move. While indirect fires to suppress the enemy or obscure maneuver are commonly employed by Reconnaissance Forces, the force must also be capable of retaining freedom of maneuver while engaged in direct fire contact.[17] The corps reconnaissance element must be organized, trained, and equipped to facilitate the use of proper movement techniques to gain contact with the smallest possible friendly element to allow the opportunity to fire and maneuver.[18]

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[14] Army Doctrine Reference Publication 3-0, *Operations*, (Washington, DC: Government Printing Office, 2016), 13.

[15] FM 3-90.2, 1-3.

[16] Field Manual 3-98, *Reconnaissance and Security Operation* (Washington, DC: Government Printing Office, 2015), 5-1 - 5-2.

[17] FM 3-90.2, 1-3.

[18] Field Manual 17-95, *Cavalry Operations* (Washington, DC: Government Printing Office, 1996), 3-4; FM 3-90.2, 1-3.

The Reconnaissance Force must be able to gain and maintain contact with the enemy on terms and conditions of their choosing. Contact with the enemy provides the staff with real-time information on the enemy's composition, disposition, location, actions, and strength that allow the staff to make recommendations to the corps commander. The Reconnaissance Force should be organized with all available capabilities to make contact with the smallest element possible. These capabilities include manned platforms and unmanned systems, dismounted operations, signals intelligence, image intelligence, human intelligence, open source intelligence, and visual observation. Once units make contact, the Reconnaissance Force must be capable of maintaining contact until given specific orders by the higher headquarters, disengagement, or displacement criteria dictate a change of mission or reconnaissance handover with another unit is complete.[19] The only other reason to break contact is that the survival of the unit is at risk.[20] The Reconnaissance Force should avoid combat unless it is necessary to answer commander critical information requirements. In the case that it is necessary to gather essential information, the Reconnaissance Force must be capable of using maneuver (fire and movement) to remain in contact while not becoming decisively engaged.[21]

The corps requires continuous information about the enemy, the terrain, and civil considerations before, during, and after an operation. Gaps in intelligence drive information requirements during all phases of operations. Reconnaissance Forces fill those gaps before operations. During an operation, reconnaissance assets must be able to answer the Commander's Critical Information Requirements regarding the enemy's composition, disposition, and actions. Along with updating information and answering Commander's Critical Information Requirements, reconnaissance units must confirm or deny the course of action that the enemy is attempting to assist the corps commander in making decisions associated with the friendly course

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[19] FM 3-98, 5-2.

[20] FM 3-90.2, 1-3.

[21] FM 3-90.2, 1-3.

of action. Additionally, the commander may employ reconnaissance to answer critical information requirements related to the civilian population in the area of operation.[22] When the operation transitions, Reconnaissance Forces must be able to maintain contact with the enemy to continue to provide the commander and his staff information to plan future operations.[23]

Corps Reconnaissance Forces must not be kept in reserve. The size and scope of a corps area of operation, along with the extended time that corps operations take, require a Reconnaissance Force capable of operating across the entire theater of operations for extended periods of time. The force must have the depth of capability to be able to rotate forces to maintain observation.[24] The Reconnaissance Force must also be able to apply the maximum amount of reconnaissance effort at the critical time. Regardless of the conditions, the Commander's Critical Information Requirements must be answered. An adequate corps reconnaissance element must be capable of applying assets at the critical times and locations to satisfy the corps information requirements.[25]

During operations, the Reconnaissance Force must use available reconnaissance assets based on their capabilities and the mission, enemy, terrain, weather, troops available, and time available. The maximum amount of coverage possible should be employed to answer the commander's critical information requirements.[26]

The Reconnaissance Force must orient on the reconnaissance objective. The reconnaissance objective focuses the unit when the enemy, time or terrain and weather conditions limit the Reconnaissance Force's ability to accomplish all of the tasks associated with their mission. The capabilities and limitations of the Reconnaissance Force have a significant impact on the

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[22] FM 3-90.2, 1-2.

[23] FM 3-90.2, 1-2.

[24] FM 3-90.2, 1-2.

[25] FM 3-90.2, 1-2.

[26] FM 3-90.2, 1-2.

aggressiveness of the reconnaissance commander and how he attempts to reach the reconnaissance objective.[27]

The Reconnaissance Force must deliver timely and accurate information to the corps staff, to seize the initiative. The corps commander will develop the plan and make decisions based upon the information provided by the corps reconnaissance element. Quick and accurate reporting allows the commander to make informed decisions because it maximizes the time that the staff can analyze the information and make recommendations.[28]

Time significantly affects friendly and enemy movement, therefore information must be reported rapidly. The Corps Reconnaissance Force must be capable of timely collection of intelligence requirements to allow the commander to make timely decisions. The Reconnaissance Force must be organized, equipped, and trained to facilitate the matching of the tempo of the reconnaissance scheme of maneuver to the urgency of the information requirements. The Reconnaissance Force must be capable of collecting on the reconnaissance objective in close contact with civilian populations. They must also possess the ability to fight enemy forces to determine composition, disposition, and intent and assess the implications of that information.[29]

Future Warfare

While the objective nature of war, as defined by Carl von Clausewitz in *On War*, remains unchanged, the subjective nature of war is susceptible to the constantly changing operational environment. Human migration, revisionist and failing states, and technological advancements resulting in the omnipresence of sensors and increased lethality on the battlefield will define the character of future war.[30]

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[27] FM 3-90.2, 1-3.; FM 17-95, 3-4.

[28] FM 3-98, 5-1.

[29] FM 3-98, 5-2; FM 3-90.2, 1-3.

[30] Carl Von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 85.

By 2035, the global population is expected to increase by 1.8 billion to a total population of 9.3 billion people. The majority of this growth is expected to occur in the developing world in large cities. Over the next 35 years, as the majority of the world's population migrates into the cities of the developing world, the number of megacities across the globe is projected to increase by 30%, from 38 to 50.[31] The terrain in these cities is characterized by subterranean infrastructure, concentrated sections of low-income dwellings, and skyscraper canyons in varying condition and functionality.[32] The predominance of urban terrain creates challenges in targeting with precision fires. Future joint operations will require land forces capable of operating in urban terrain characterized by complex structures, above and below the surface, to defeat future threats.[33]

The United States will face two geopolitical challenges that will drive future conflicts. The geopolitical shift from a unipolar world to multipolar will increase the probability of war between nation states.[34] Enemies of the United States will employ traditional, unconventional, and hybrid warfare to challenge U.S. security and vital interests.[35]

State and non-state actors will challenge the current international order by exploiting unstable states' ability to provide legitimate governance.[36] Revisionist states and non-state actors will use all elements of power to obtain a relative advantage over the United States. Some states will be willing to use violence or coercion to change the international order. The willingness of

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[31] US Department of Defense, *Joint Operating Environment (JOE) 2035*(Washington, DC: Government Printing Office, 2016), 10; Mark A. Milley, "Dwight David Eisenhower Luncheon Association of the United States Army", *Ausa.Org*, last modified 2016, accessed October 10, 2016, https://www.ausa.org/events/ausa-annual-meeting-exposition/sessions/dwight-david-eisenhower-luncheon.

[32] *Joint Operating Environment (JOE) 2035*, 12.

[33] TRADOC Pamphlet 525-3-1, *The U.S. Army Operating Concept Win In A Complex World* (Washington, DC: Government Printing Office, 2017), 12.

[34] Mark A. Milley, "Dwight David Eisenhower Luncheon Association of the United States Army", Ausa.Org, last modified 2016, accessed October 10, 2016, https://www.ausa.org/events/ausa-annual-meeting-exposition/sessions/dwight-david-eisenhower-luncheon.

[35] TRADOC Pamphlet 525-3-1, 10.

[36] *Joint Operating Environment (JOE) 2035*, 1.

belligerents to seek regional primacy through violence is a result of the recent successful application of hybrid warfare. Our enemies will employ a combination of dispersion, concealment, and intermingling with civilian populations to avoid US strengths. This hybrid approach avoids attribution and retribution while generating targeted chaos to influence the behavior of neighboring states. The US Army Operating Concept predicts that "future enemies will act to remain indistinguishable from protected populations and infrastructure."[37] Our adversaries will employ low-cost proxy warfare to avoid attribution and escalation making it difficult to determine who is involved and why.[38] The continued application of hybrid warfare to obtain a regional advantage is likely to produce even more failing or fragile states. Because of fragile and failing states, the world is likely to see continued sectarian strife, insurgency, and civil war. While hybrid warfare, like the recent Russo-Ukraine conflict, is not a new phenomenon, it is likely that the near future will produce technological advances of great magnitude that will affect the way wars are fought.

History demonstrates that, as pointed out by the US Army Operating Concept, our "potential enemies invest in technologies to obtain a differential advantage and undermine U.S. ability to achieve overmatch."[39] The technological advantage that the United States employed in its most recent conflicts is fleeting. Our enemies observed our forces in Iraq and Afghanistan and adjusted their forces accordingly. The lessons learned from the employment of technology in recent conflicts points towards a battlefield characterized by the ubiquitous presence of Unmanned Aerial Systems, the increased lethality of indirect fires, the dominance of main battle tanks with advanced armor packages, and the declining survivability of Light Infantry Vehicles.[40]

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[37] TRADOC Pamphlet 525-3-1, 18.

[38] *Joint Operating Environment (JOE) 2035*, 4-6.

[39] TRADOC Pamphlet 525-3-1, 11.

[40] Philip A. Kraber, *"Lessons Learned" From the Russo-Ukrainian War Personal Observations* (Vienna, VA: The Potomac Foundation, 2016), accessed November 4, 2016, https://prodev2go.files.wordpress.com/2015/10/rus-ukr-lessons-draft.pdf.

The recent Russo-Ukraine conflict provides an example of how a potential future enemy's application of technology affected the battlefield.

The United States leads the way in the use of Unmanned Aerial Systems, but recent experiences across the globe indicate that we are not alone and that Unmanned Aerial Systems will be prevalent in future conflicts. In 2014, over a three-month period of the Russo-Ukrainian conflict, observers identified 14 different drone designs flying in support of the Russian separatists. Although some systems were observed executing long-range surveillance, the majority of the systems focused on tactical and operational ranges. It was not uncommon to observe several Unmanned Aerial Systems operating at multiple altitudes. Russia employed the systems in this manner to capitalize on their various sensors to identify Ukrainian positions and destroy them with Multiple Launch Rocket Systems. The prevalence of Unmanned Aerial Sensors combined with increasingly lethal indirect fires creates a deadly combination.[41]

The increased targeting capabilities that the Unmanned Aerial Systems provide, combined with experiences in recent history, indicate that artillery will remain the king of battle in future conflicts. Future belligerents will learn from the Ukraine conflict, where artillery fires produced 80-85% of the casualties. While pervasive Unmanned Aerial Systems are partially responsible for this increased lethality, the type of artillery system and improved munitions are also responsible. An emphasis on extending the range of artillery was evident in an increased ratio of Multiple Launch Rocket Systems to tubed artillery and the employment of new long-range cannons. The increased range of the Multiple Launch Rocket Systems enabled more engagements. To decrease the time between target acquisition and target engagement the Russians used massed fires combining multiple types of munitions. The combination of Dual-Purpose Improved Conventional Munitions, scatterable mines, top-attack munitions and thermobaric warheads

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[41] Kraber, 12-16.

devastated Ukrainian forces. One such Multiple Launch Rocket Systems strike destroyed two mechanized battalions.[42]

The increased lethality of the future battlefield combined with an emphasis on light Infantry Fighting Vehicles that prioritize mobility over survivability significantly affects how units maneuver in combat. The lack of survivability had several effects on the battlefield in the Ukraine. Troop losses were so high in units that employed Light Infantry Fighting Vehicles that Soldiers on both sides took to riding on top of vehicles instead of inside of them. Additionally, both sides conducted assaults dismounted with the vehicles in over-watch. The sacrifice of mobility allowed the enemy to bypass friendly positions. Additionally, combined units with tanks and light Infantry Fighting Vehicles left their tanks exposed without infantry to protect them from other infantry.[43] When a lightly armored Reconnaissance Force dismounts to increase survivability, it sacrifices its freedom of maneuver. Additionally, the enemy decides whether or not to maintain contact.

Technological advances in reactive armor and anti-tank weapons will continue to dictate the role of the main battle tank on the battlefield. The Russo-Ukraine conflict provided an example of when armor technology is superior to anti-tank munition capability. The lack of tandem warhead munitions to counter reactive armor made tanks the dominant force on the battlefield and left dismounted forces helpless. This contradiction to the Yom Kippur War, where advances in dismounted anti-tank weapons devastated armored forces, left infantry vulnerable to concentrated tank attacks. However, as tandem warhead munitions become more prevalent on the battlefield, tanks will be vulnerable to Anti-Tank Guided Missiles that have an advantage in range.[44]

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[42] Kraber, 16-21.

[43] Kraber, 26-28.

[44] Kraber, 22-26.

The United States must be prepared to fight in an environment flooded with sensors. Constantly moving, detached forces will be the norm. Our adversaries will replicate the lethal combination of Unmanned Aerial Sensors and long range lethal indirect fires because competition tends to emulate the dominant force. While the United States was fighting in Iraq and Afghanistan, its future adversaries watched, learned, and increased their capabilities. Commanders must assume that the enemy will make every effort to prevent any collection by US sensors while increasing their capability.

Technologically advanced forces, like the United States, are vulnerable to offsetting tactics. Enemy forces can employ low technology tactics like an electromagnetic pulse or cyber-attack to deny a technological advantage. It is easy for the enemy to compensate for technological disadvantage. Competent enemies will always be reluctant to expose themselves to be outmaneuvered or targeted from the air. Technological advantages are short-lived because opposing forces will always counter. As a result, the soldier on the ground will always matter more than the system that he employs.[45]

Reconnaissance Organization and Equipment

To win in a complex world, the US Army corps requires a formation organized and equipped to focus on reconnaissance and security operations to allow the corps to seize and retain the initiative over enemy forces. To provide US Army corps commanders the ability to fight for information and gain the situational understanding needed to seize and retain the initiative and set conditions for success across all phases of Joint Operations, the Army must provide a formation that is properly organized and equipped to take on the corps reconnaissance and security mission.

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[45] Colin S. Gray, *Another Bloody Century: Future Warfare* (London: Cassell Reference, 2007), 114.

As the Army experiments with the corps reconnaissance formation, the successful reconnaissance and security organizations of the past are a guide to creating the reconnaissance and security formation of the future. The lessons learned from World War II remain relevant; the Corps Reconnaissance Force should perform the traditional role of a highly mobile, heavily armed and lightly equipped combat force, capable of executing the fundamentals of reconnaissance on the modern battlefield.[46]

The future reconnaissance and security force will operate as part of a joint coalition as an expeditionary maneuver force capable of rapid deployment and transition to operations. The Reconnaissance Force must possess the ability to operate dispersed over wide areas with the ability to integrate operations and intelligence to develop situational understanding through action while possessing the mobility to concentrate rapidly.[47] The reconnaissance and security force must be a combined arms formation composed of the mobility, protection, and precision firepower that allow it to fight for understanding and identify opportunities to seize, retain, and exploit the initiative.[48] This formation must be organized to leverage every warfighting function during the execution of fundamentals of reconnaissance. To fill the reconnaissance and security capability gap at the corps level, the Army augmented 1st Stryker Brigade Combat Team, 4th Infantry Division with additional enablers with the intent to employ them as an operational Reconnaissance Force.[49]

The ground maneuver force should be the focal point of any reconnaissance and security formation. It is the most dependable element of the Reconnaissance Force because it ensures continuous reconnaissance regardless of the conditions. It also possesses the ability to develop the

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[46] European Theater, "Study Number 49," 13.

[47] TRADOC Pamphlet 525-3-1, iii.

[48] TRADOC Pamphlet 525-3-1, 18.

[49] 1st Stryker Brigade Combat Team 4th Infantry Division, "1/4 SBCT Reconnaissance and Security 1AD LPD" (Leader Professional Development Lecture, MCTP, Fort Leavenworth, August 23, 2016), 3.

situation through direct contact with the adversary and can make the enemy reveal his course of action. Additionally, as our technological advantage dissipates and our enemies develop methods to defeat our technology based reconnaissance assets, the ground maneuver force remains available to commanders to develop the situation and seize, retain, and exploit the initiative.

The size of the maneuver force should depend on the reconnaissance or security objective. The ground Reconnaissance Force for a corps must be capable of providing reconnaissance and security across a number of routes or areas to ensure continuous reconnaissance within a corps sized area of operation. The force must be able to locate the anticipated enemy, fight for information, defeat, delay, and attrite enemy reconnaissance or maneuver capabilities. The extended distance that the Reconnaissance Force will operate from the main body requires the Reconnaissance Force be tactically self-contained. Operating up to 50 to 60 kilometers away from the main body, the reconnaissance formation must be able to develop the situation and deny the enemy's reconnaissance the ability to collect information on the main body using effective direct and indirect fires.[50]

As the future operating environment becomes increasingly more urban, the ability to answer the commander's critical information requirements in complex terrain and cities is essential. The 1st Stryker Brigade Combat Team, 4th Infantry Division is composed of 108 Infantry Squads and 27 Scout Sections mounted on Strykers.[51] The robust infantry force in the Reconnaissance and Security Brigade Combat Team enable the formation to fight for information in complex and urban terrain. The large ratio of Soldiers to vehicles and the speed and range of the Stryker platform coincide with the recommendations of senior officers based on lessons learned during World War II. Following World War II, the mechanized reconnaissance inability to fight dismounted lead the general board to recommend an increased ratio of Soldiers to

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[50] 1st Stryker Brigade Combat Team 4th Infantry Division, "1/4 SBCT Reconnaissance and Security 1AD LPD", 2016, 4. The distance from the corps main body briefed by 1st Brigade 4th Infantry Division during the 1st Armored Division LPD at Fort Leavenworth was 50 to 60 Kilometers.

[51] 1/4 SBCT Reconnaissance, 4.

vehicles, and the inclusion of a squad of mounted riflemen to every mechanized cavalry platoon.[52] While the Stryker platform allows the increase in the number of Soldiers able to fight dismounted that the Commanders from World War II requested, it falls short in its ability to enable the Reconnaissance Force to perform the fundamentals of reconnaissance.

The lack of survivability and firepower within the Stryker platform hinders its ability to retain freedom of maneuver and maintain contact. An increased emphasis on light Infantry Carrier Vehicles amongst armies across the globe increased the opportunities for lessons learned when fighting Infantry Carrier Vehicles in conflict. The experience of both the Russians and the Ukrainian forces during the Ukraine conflict highlighted many vulnerabilities of the Infantry Carrier Vehicle on the modern battlefield. The lethality of artillery, anti-tank munitions, and automatic cannons mounted on other infantry carriers outmatched the armor of these vehicles. Casualties amongst Soldiers mounted in infantry vehicles were so high that they opted to ride on top of the infantry carriers instead of inside of them. The risk of a mass casualty due to the loss of a single vehicle was too high, so both sides frequently opted to conduct assaults dismounted. This relegated vehicles to an over-watch role to provide suppressive fire to prevent the vehicles from exposure to lethal fires forward.[53] While fighting dismounted increased survivability, once the Soldier separates from his vehicle, his freedom of maneuver is significantly diminished.

Reconnaissance units must retain the ability to maneuver on the battlefield. When decisive engagement occurs, and the unit is fully committed, reconnaissance ceases.[54] Lessons learned from combat, and numerous training center rotations demonstrate that the most effective way to fight the Infantry Carrier Vehicle, specifically the Stryker, is to maneuver to complex terrain and fight dismounted. This technique takes advantage of the mobility of the vehicle and mitigates the risk of taking casualties in groups of eleven. While this is an effective fighting technique for an

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[52] European Theater, "Study Number 49," 14-15.

[53] Kraber, 27.

[54] FM 17-95, 3-4.

infantry unit, it violates the fundamentals of reconnaissance. The Reconnaissance Force surrenders its freedom of maneuver to seek cover in complex terrain. A dismounted reconnaissance unit risks being decisively engaged, fixed and therefore unable to complete the reconnaissance mission. If the reconnaissance unit can retain freedom of maneuver, the Infantry Carrier Vehicle presents issues in gaining and maintaining contact.

The Reconnaissance Force must be capable of gaining and maintaining contact because the enemy is seldom static and unreported enemy activity can have decisive consequences on friendly operations.[55] Lessons learned in World War II dictated that the mission of the Reconnaissance Force should be combat and that the belief that Reconnaissance Forces could conduct operations with minimal fighting was unsound.[56] However, the Stryker does not have sufficient firepower or survivability to excel in mounted maneuver combat. Much like many other armies, the US is mounting a 30 mm cannon on the Stryker to increase lethality. While this does allow the infantry carrier to compete with similar vehicles like the BTR, it does not mitigate the risk associated with the vehicles lack of survivability. The threat of receiving casualties a squad at a time causes commanders to hesitate. Maneuvering to develop the situation rapidly and gain contact with the enemy poses a significant risk when a movement to contact could result in mass casualties 50-60 kilometers from the next friendly unit. Commander's hesitance to commit Infantry Carrier Vehicles drove leaders in the Ukraine conflict to mount their infantry squads split between two BMPs. Commanders replacing BTRs with BMPs increased the number of vehicles while decreasing the dismounted force and increasing the maintenance and logistic strain on the unit.[57] 1st Brigade, 4th Infantry Division, as a purely Stryker ground force, faces a significant survivability threat in a movement to contact against a mechanized force.[58] The weaknesses of the

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[55] FM 17-95, 3-4.

[56] FM 17-95, 1-3.

[57] Kraber, 14.

[58] Kraber, 5.

Stryker platform combined with historical experience demand that the Army augment the corps reconnaissance ground maneuver element with manned aviation.

Manned aviation enables the reconnaissance and security force to better develop the situation and seize, retain, and exploit the initiative. Manned aviation enhances the formations' ability to gain and maintain contact. The elevated point of observation and increased mobility of the aviation assets enables the Reconnaissance Force to develop the situation faster and report information more rapidly and accurately while increasing the lethality of the formation. The Corps Reconnaissance Force operates well beyond the range of the typical maneuver force because it operates in the corps deep area and shapes the corps deep fight. The nature of the reconnaissance mission combined with these extended distances increases the need for a responsive and lethal force that can quickly reinforce success or prevent failure to enable the corps to seize, retain, and exploit the initiative. The aviation task force is designed to support the reconnaissance mission by providing direct support to the ground maneuver by employing fires to destroy or suppress enemy forces. Additionally, they enable the ground maneuver force through air assault, air movement of personnel, equipment and supplies, and air medical evacuation.[59] 1st Brigade, 4th Infantry Division is currently augmented with ten attack helicopters from the 6-17ARS under operational control. The Reconnaissance and Security Brigade Operational Organizational Concept calls for 16 attack helicopters in support of the Reconnaissance Force.[60] The six aircraft difference is significant to the 1st Brigade, 4th Infantry Divisions ability to fight for information. Given the ground force's vulnerability due to lack of survivability, the Corps Reconnaissance Force will rely heavily on aviation to mitigate risk. The Reconnaissance and Security Brigade Combat Team must be resourced with attack aviation requisite of the threat to ensure continuous reconnaissance, gain and maintain contact, and retain freedom of maneuver.

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[59] Annex B: R&S BCT O&O (Evolution 3), B-8.

[60] Annex B: R&S BCT O&O (Evolution 3), B-8; 1/4 SBCT Reconnaissance, 3.

The manned aviation in the Reconnaissance and Security Brigade Combat Team must be augmented with Unmanned Aerial Systems.

The Corps Reconnaissance Force must have Unmanned Aerial Systems to gain and maintain contact with the smallest force possible, to ensure continuous reconnaissance, and to develop the situation rapidly. Unmanned Aerial Systems allow the Reconnaissance Force to reconnoiter a larger area of operation without placing Soldiers' lives at risk. Unmanned Aerial System employment is most effective forward or on the flanks. Employed as a team, Unmanned Aerial System and ground reconnaissance elements provide excellent surveillance capability; support target acquisition efforts; assist in zone, area, and route reconnaissance; locate and help determine enemy force composition, disposition, and activity; maintain contact with enemy forces; provide target location; provide or enhance multispectral sensor coverage of the area of operation; reduce or eliminate exposure time of ground reconnaissance elements in high-risk environments; and provide digital connectivity that enables rapid product dissemination and constant communications.[61]

While Unmanned Aerial Systems are an excellent force multiplier, they have limited effectiveness in locating enemy forces that are well covered or concealed. In most cases Unmanned Aerial Systems organic to the reconnaissance unit are not suited for deep, long duration searches, are vulnerable to enemy fire, have significant weather restrictions, possess restricting line-of-sight requirements between aircraft and ground control stations, have unique Class III/V requirements, do not have the ability to provide first-hand knowledge of the situation, and have fragile components.[62]

The Reconnaissance and Security Brigade Combat Team has three Shadow Platoons and three Grey Eagle aircraft under its operational control. When combined with its organic Raven

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[61] FM 3-98, 5-5.

[62] FM 3-98, 5-5.

unmanned aerial systems, the Reconnaissance and Security Brigade Combat Team has a robust

fleet of over 40 systems to execute manned-unmanned teaming. However, the large number of

sensors requires a significant processing, exploitation and disseminating capability, not resident

in the Reconnaissance and Security Brigade Combat Team[63]

The Corps Reconnaissance Force task organization must include Engineer support to retain

freedom of maneuver, develop the situation rapidly, and to increase the accuracy of the reporting.

The engineers provide mobility, counter-mobility, and survivability support. The Reconnaissance

and Security Brigade Combat Team has one Mobility Augmentation Company allowing the

Brigade to provide engineer support forward to each maneuver battalion.[64] Combat engineers

enhance the execution of route and area reconnaissance. Route clearance teams can provide

mobility and mine disposal. Additionally, the engineers provide infrastructure assessments (such

as sewage, water, electricity, academics, trash, medical, safety, and other considerations), as well

as basic horizontal construction to restore services. Geospatial teams provide detailed topography

products of the reconnaissance objective to focus the reconnaissance effort of specific

objectives.[65]

The corps reconnaissance element must be task organized with indirect fire support assets

to allow the Reconnaissance Force to retain freedom of maneuver, gain and maintain contact, and

develop the situation rapidly. Indirect fires allow the commander to degrade the enemy scheme of

maneuver without exposing the Reconnaissance Force to observation and direct fire

engagement.[66] The Corps Reconnaissance Force must be capable of massing direct and indirect

fires quickly to destroy enemy Reconnaissance Forces, maintain freedom of maneuver, and

develop the situation quickly. The Reconnaissance and Security Brigade Combat Team receives

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[63] 1/4 SBCT Reconnaissance, 5.

[64] Annex B: R&S BCT O&O (Evolution 3), B-8.

[65] FM 3-98, 7-4.

[66] FM 3-98, 5-10.

indirect fire support from its organic artillery battalion armed with M777s and organic Mortars. Because the reconnaissance formation operates in the corps deep area, it often cannot be supported by the subordinate units engaged in the close fight. Therefore, the Corps Reconnaissance Force requires resident fire support from within its formation to facilitate reconnaissance and security operations within the corps deep area.[67] 1st Brigade, 4th Infantry Division is reinforced by 1/14 Field Artillery Battalion giving it a total of 70 organic artillery systems (Mortars, M777s, and HIMARS) to provide indirect fires to the close and deep fights.[68]

The Corps Reconnaissance Force requires specific intelligence enablers beyond the baseline brigade combat team to integrate intelligence, reconnaissance, and security to answer the corps commander's critical information requirements. The access to theater, national and other collection assets needed to meet the corps commander's collection requirements does not exist in the current Brigade Combat Team military intelligence company organization. However, many of the assets are resident in the corps' Expeditionary Military Intelligence Brigade.[69]

The Corps Reconnaissance Force must be resourced with critical intelligence capabilities to ensure continuous reconnaissance, orient on the reconnaissance objective, report information rapidly and accurately, retain freedom of maneuver, gain and maintain contact, and develop the situation quickly. These key capabilities are, signals intelligence, human intelligence, technical intelligence, and open source intelligence. Signals intelligence enables the Reconnaissance Force to tip and cue across platforms to gain and maintain contact with the enemy. With only two Multifunction Teams resident in 1st Brigade, 4th Infantry Division, there is limited ground signals intelligence capability. Each maneuver battalion should be resourced with two signals intelligence collection teams to maximize the reconnaissance forward. The Brigade is currently

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[67] Army Doctrine Publication 3-0, *Operations* (Washington, DC: Government Printing Office, 2016), 10.

[68] 1/4 SBCT Reconnaissance, 3, 5.

[69] Annex B: R&S BCT O&O (Evolution 3), B-7.

only capable of resourcing two across the entire Brigade. Over-reliance on aerial based signals collection could leave the ground maneuver force wanting for additional assets to tip and cue its other reconnaissance assets and provide early warning. Signals detection enables the Reconnaissance Force to gain and maintain contact with the smallest force possible and maximizes the use of a robust unmanned aerial system fleet, and organic artillery capability. Signals intelligence is imperative in the reconnaissance effort. Additionally, tactical Cyber and Electronic Warfare enablers should be incorporated when authorities allow for it.

The other half of the Multifunction Team is a Human Intelligence Team. Human intelligence assets allow the Reconnaissance Force the ability to collect intelligence from enemy, friendly, and civilians within the corps deep area upon or immediately following contact. The combining of the Signals Intelligence Team with the Human Intelligence Team developed from the counterinsurgency fights in Afghanistan and Iraq. While this combination excelled during stability operations, commanders frequently break the Multifunction Team into its subordinate components during offensive and defensive operations. The Human Intelligence Teams provide tactical questioning forward or interrogations in the rear. While the Signals Intelligence capability found in the two multifunction teams in the Reconnaissance and Security Brigade Combat Team are not enough, the two Human Intelligence Teams are adequate.

The intelligence capabilities resident in the Military Intelligence Company in the Reconnaissance and Security Brigade Combat Team must be augmented with resources from outside of the brigade. Technical intelligence assets allow the reconnaissance formation to use signals to answer the corps commander's priority information requirements while developing the situation faster. Additionally, open source intelligence enables the reconnaissance formation to take advantage of the abundance of information available in cyberspace that answers corps information requirements.[70] However, these additional assets will add to the current intelligence

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[70] Author's firsthand experience as a Brigade Operations Officer for a Battlefield Surveillance Brigade that transitioned to an Expeditionary Military Intelligence Brigade.

processing capacity deficiency. The corps should augment the Tactical Ground Station Platoon with a portion of the Expeditionary Military Intelligence Brigade's two Processing, Exploitation, and Dissemination Companies and the Open Source Intelligence capability resident in the corps headquarters.

The increased threat of a conventional or proxy war with a near-peer nation state further validates the requirement for robust protection capabilities within the corps reconnaissance formation. The potential for a near-peer threat to gain air superiority for at least short periods increases the need for an integral air defense capability. Air defense will better ensure continuous reconnaissance, enable freedom of maneuver, and allow the reconnaissance and security force to remain oriented on the reconnaissance objective, in situations that friendly forces do not have air superiority. The current air defense capability resident in the Reconnaissance and Security Brigade Combat Team is insufficient to support the frontage of a Corps Reconnaissance Force. The Reconnaissance and Security Brigade Combat Team must be resourced with additional air defense forces to ensure continuous reconnaissance.[71] Additionally, with the increased chemical, biological, radiological, and nuclear threat, the Reconnaissance Force requires a requisite reconnaissance and decontamination capability not currently found in 1st Brigade, 4th Infantry Division to anticipated chemical, biological, radiological, and nuclear threats, hazards and contaminated areas, and sites that might be encountered in need of assessment and possible exploitation.[72]

The increased distances that the corps reconnaissance formation will operate at demand a robust sustainment capability. The corps reconnaissance element's sustainment capabilities must be able to support high-tempo operations, dispersed and at extended ranges.[73] These capabilities enable continuous reconnaissance. Additionally, the Corps Reconnaissance Force requires a

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[71] 1/4 SBCT Reconnaissance, 5.

[72] FM 3-98, 1-8.

[73] Annex B: R&S BCT O&O (Evolution 3), B-7.

mission command capability to facilitate communication of critical information across the depth and breadth of the corps area of operation. Without the mission command capability, the Corps Reconnaissance Force is unable to answer critical information requirements.

Combat Experience

The current operating environment is complex. The Reconnaissance Force will fight across multiple contested domains in degraded conditions. The battlefield is increasingly more lethal, and the fighting is shifting to complex terrain. Increasingly emboldened enemies challenge US deterrence measures by operating below threshold levels that generate a US response. While the current operating environment is different from the environment of World War II, it is no more complex, and the fundamental lessons learned from major combat between peer nation states should inform the conduct and preparation for future warfare.

The General Board United States Forces, European Theater made several recommendations on the tactical employment, techniques, organization, and equipment of mechanized Reconnaissance Forces in Study Number 49. Studies of the campaigns in Western Europe demonstrated that a doctrine of "sneaking and peeping" by reconnaissance was unsound. The failed Battlefield Surveillance Brigade experiment along with the transformation of the Armored Cavalry Regiments should have been avoided. World War II demonstrated that reconnaissance units had to fight for information. Organizing and equipping the Reconnaissance Force based solely on the requirements of reconnaissance missions eliminated options for commanders by decreasing the flexibility of the Reconnaissance Force. A lack of organic firepower and strength handicapped Reconnaissance Forces in the performance of their assigned missions during World War II.[74] Reconnaissance Forces had to fight for information that could not be gathered by

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[74] European Theater, "Study Number 49," 1.

stealthy observation.[75] The European Board concluded that Reconnaissance Forces should be organized for combat and perform the traditional cavalry role of a "highly mobile, heavily armed and lightly equipped combat force."[76]

The combat experience of World War II led commanders to believe that the capability of the Reconnaissance Force to perform the role of a light, fast and hard hitting combat force was valuable and should be maintained.[77] They determined that the Reconnaissance Force must have speed and range. They recommended a lightly equipped force, and until greater technical progress was made with regard to tracked vehicles, the majority of the force should be mounted on wheeled or semi-tracked vehicles.[78] Their experience was that the mechanized Reconnaissance Force possessed superior mobility on roads. However, this mobility suffered from inadequate speed and range due to "the excess weight of attached combat vehicles, such as medium tanks and M10 and M36 tank destroyers.[79] The lack of mobility lead them to believe that an improved armored car, not a light tank, should be the combat vehicle of the Reconnaissance Force of the future.[80] With the future in mind, the board suggested that when a full-tracked vehicle provided the necessary range, mechanical reliability, and silence of operation the personnel carrier should be fully-tracked.[81]

As the US Army builds the Corps Reconnaissance Force of the future, the recommendations of the European Board highlight the benefits and drawbacks of the vehicles in the Army's current inventory. 1st Brigade 4th Infantry Division is mounted on Strykers. The Stryker platform provides increased mobility on roads but is less mobile when traveling cross-

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[75] European Theater, "Study Number 49," 9.

[76] European Theater, "Study Number 49," 13.

[77] European Theater, "Study Number 49," 13.

[78] European Theater, "Study Number 49," 14.

[79] European Theater, "Study Number 49," 10.

[80] European Theater, "Study Number 49," 18.

[81] European Theater, "Study Number 49," 19-20.

country. The Bradley Fighting Vehicle is less mobile on roads but has greater mobility across open terrain. However, the Bradley is much heavier than the Stryker and requires more attention to bridge classification. Finally, the M1A2 Abrams Tank is restricted to roads with bridges capable of holding seventy tons, but is highly mobile off-road.

The European Board findings also determined that the Reconnaissance Force needed an increased dismounted fighting capability. In addition to the Reconnaissance Force being highly maneuverable, the board determined that the ratio of men to vehicles in the Reconnaissance Force should be "as large as practicable."[82] The Reconnaissance Force should provide a marked increase in personnel available for dismounted combat.[83] During combat in World War II, Reconnaissance Forces were frequently out manned and gunned in situations where the fighting was primarily dismounted.

The findings of the board highlight the increased Soldier carrying capacity of the Stryker. The Stryker Infantry Carrier Vehicle is capable of carrying eleven total Soldiers with two crew members and nine infantrymen in the back. In contrast, the Bradley Fighting Vehicle has a three-man crew with up to six additional infantrymen in the back. The Abrams Tank has a four-man crew with no potential to carry dismountable infantry. However, the lethality of the modern battlefield demonstrated in the Ukraine displayed the risk associated with lightly armored infantry carriers and the mitigation techniques that Soldiers use to protect themselves. When survival is more probable while dismounted than when mounted, the ability to gain and maintain contact and maintain freedom of maneuver decreases. The commander will likely assume the same course of action as Soldiers in the Ukraine and sacrifice maneuverability for survivability and fight dismounted. Additionally, the resulting eleven casualties generated by the destruction of a single vehicle is a significant risk to the mission and the force. The evacuation of any casualties during

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[82] European Theater, "Study Number 49," 14.

[83] European Theater, "Study Number 49," 20.

reconnaissance operations is a significant undertaking because of the vast distances, and the nature of the mission places the Reconnaissance Force in the corps deep area, potentially behind enemy lines. The evacuation of eleven casualties during reconnaissance operations requires capabilities beyond those integral to the Corps Reconnaissance Force. Given the current inventory, the two options of reconnaissance vehicles with the ability to transport dismountable Soldiers are the Bradley and the Stryker. The Stryker's increased capacity of three additional Soldiers comes at the cost of decreased survivability over the Bradley. There is also a significant difference in firepower.

During World War II the fire power of the Reconnaissance Force also suffered severely due to an ineffective primary weapon on the armored car.[84] The board recommended that the Army look into up-gunning the reconnaissance platform. Similarly, the Army is currently up-gunning the Stryker platform with a 30 mm cannon. Similar to the BTRs used in many different armies across the globe, the Stryker will soon be armed with a 30 mm. This increase in firepower brings the Stryker platform on par with the Bradley's 25 mm Bushmaster.

During World War II the high degree of flexibility and adaptability demonstrated by the Reconnaissance Force enabled it to perform a great variety of missions and thereby provided commanders with more options.[85] As the Army builds the corps reconnaissance formation of the future, it must be organized and equipped for combat to provide the commanders of future conflicts with the flexibility recognized by the European Board. This formation must maximize both maneuver and firepower while providing the largest dismounted force that is practicable. As the world's population migrates towards urban areas, combat is more likely to occur in built-up areas, placing a premium on dismounted firepower. However, the increasingly more lethal battlefield possesses a significant risk to force and mission for units mounted in less survivable

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[84] European Theater, "Study Number 49," 10.

[85] European Theater, "Study Number 49," 11.

Infantry Carrier Vehicles. Given the current inventory of the US Army, which platform or combination of platforms best mitigates the risks associated with the current operating environment, provides the commander with a flexible formation capable of adapting to the complex battlefield, and capable of adhering to the fundamentals of reconnaissance?

Conclusion and Recommendations

Friendly forces engage a thinking, adaptive enemy that counters every friendly attempt to gain a position of relative advantage with a counter move that benefits the enemy's position.[86] The geopolitical shift from a unipolar world to a multipolar world increases the probability of war between nation states.[87] Revisionist states and non-state actors will use all elements of power to obtain a relative advantage over the United States. The willingness of our enemies to seek regional primacy through violence is a result of the continued successful application of hybrid warfare. Our enemies will employ a combination of indirect and direct actions to disrupt any successful friendly response. This hybrid approach is intended to avoid attribution and retribution while generating targeted chaos to influence the behavior of neighboring states. TRADOC Pamphlet 525-3-1: *The US Army Operating Concept Win in a Complex World* tells us that our "future enemies will act to remain indistinguishable from protected populations and infrastructure."[88] Our enemies will employ low-cost proxy warfare to avoid attribution and escalation making it difficult to determine who is involved and why.[89] The Corps Reconnaissance Force must be an agile force capable of executing reconnaissance and security operations across all domains to ensure that the joint force has freedom of action. The increased lethality of the

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[86] Army Techniques Publication 5-0.1, *Army Design Methodology* (Washington, DC: Government Printing Office, 2015), 1-1.

[87] Milley, "Dwight David Eisenhower Luncheon"

[88] TRADOC Pamphlet 525-3-1, 18.

[89] *Joint Operating Environment (JOE) 2035*, 4-6.

battlefield demands that the Reconnaissance Force be mobile with the ability to operate in depth across large areas of operation and able to mass rapidly to ensure overmatch. Additionally, the Reconnaissance Force must be able to adapt to the operating environment and be able to fight for information in restricted terrain, mega-cities, and rural areas.

As the US Army builds the Reconnaissance Force of the future, it must recognize that any technological competitive advantage is short-lived. The US technological advantages will, in time, erode as the enemy imitates our success. The advantages once enjoyed by US forces become norms and lose their advantage.[90] It is, therefore, imperative that, instead of depending on technological superiority, the Reconnaissance Force of the future relies on well-executed fundamentals. The Fundamentals of Reconnaissance must inform the construct of the corps reconnaissance and security force of the future. This new reconnaissance formation must be able to ensure continuous reconnaissance, remain oriented on the reconnaissance objective, report information rapidly and accurately, retain freedom of maneuver, gain and maintain contact, and develop the situation rapidly[91]

The corps requires continuous information about the enemy, the terrain, and civil considerations before, during, and after an operation. Gaps in information drive information requirements during all phases of operations. The size and scope of a corps area of operation, along with the extended time that corps operations take, require a Reconnaissance Force capable of operating across the entire corps area of operation for extended periods of time. The corps reconnaissance element must be capable of retaining freedom of maneuver. When a Reconnaissance Force becomes decisively engaged, reconnaissance stops, the reconnaissance objective is lost, and the focus becomes survival. The ability to gain and maintain contact with the enemy on terms and conditions of their choosing is essential to the Reconnaissance Force. The

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[90] Jamshid Gharajedaghi, *Systems Thinking: Managing Chaos and Complexity*, 3rd ed. (Burlington, MA: Elsevier, Inc., 2011), 4, iBooks.

[91] FM 3-90.2, 1-2.

ability to gain and maintain contact provides the staff with real-time information on the enemy's composition, disposition, location, actions and strength, enabling staff recommendations to the corps commander.[92]

To provide US Army corps commanders the ability to fight for information and gain the situational understanding needed to seize and retain the initiative and set conditions for success across all phases of Joint Operations, the Army must provide a formation that is properly organized and equipped to take on the corps reconnaissance and security mission. The reconnaissance and security force must be a combined arms formation composed of the maneuverability, protection, and precision firepower that allow it to fight for understanding and identify opportunities to seize, retain, and exploit the initiative across all domains.[93]

A reconnaissance formation only equipped with the Stryker Infantry Carrier Vehicle is unable to adhere to the fundamentals of reconnaissance on the modern battlefield. The inability to maintain freedom of maneuver results in Stryker formations becoming decisively engaged. Because the Stryker formation is most lethal as a dismounted force, upon contact the force dismounts, is no longer oriented on the reconnaissance objective, and no longer maintains a maneuver advantage over the enemy. Maintaining contact is the enemy's decision. This phenomenon is the result of the lack of survivability and firepower integral to the platform.

While the addition of a 30mm cannon does not solve the survivability issue, it does increase the firepower of the Stryker. The 30mm cannon allows the Stryker to maneuver while its dismounts are mounted. However, observations from the Ukraine conflict demonstrated the lethality of modern artillery munitions against Light Infantry Fighting Vehicles. The loss of a single vehicle within the Stryker Reconnaissance Force results in a mass causality evacuation of eleven reconnaissance soldiers. Consequently, the flexibility that each infantry squad mounted in

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[92] FM 3-90.2, 1-2.

[93] TRADOC Pamphlet 525-3-1, 18.

a Stryker provides must be balanced against the risk associated with the lack of survivability during mounted maneuver.

Finally, the US Army must recognize that predictions of future conflicts are inaccurate. Secretary of Defense James Mattis, Former Secretary of Defense Robert Gates, Admiral Michael Mullen, and Lieutenant General H.R. McMaster are all on record lamenting our perfect record of failing to predict the next conflict.[94] Beyond five years, the most gifted forecasters' predictions "decline toward chance."[95] It is, therefore, imperative that the Reconnaissance Force of the future be adaptable and flexible providing the commander with the most options possible. Therefore, Strykers should not fight for information without additional support from more lethal and survivable ground platforms. A combination of Abrams Tanks, Bradley Fighting Vehicles, and Stryker Infantry Carrier Vehicles provides the commander with the most flexible formation capable of adapting to the complexity of the modern operational environment. The lethality of the environment will lead to more dispersion on the battlefield.[96] To provide the commander with the most options and meet the demands of the future operating environment, the Corps Reconnaissance Force should be task organized at the troop level with one Tank Platoon, two Bradley Platoons, and one Stryker Platoon. When complimented with the homogeneous attack aviation, artillery, intelligence, protection, and sustainment elements the Reconnaissance Force is a lethal formation capable of seizing and retaining the initiative over enemy forces across all domains.

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[94] Micah Zenko, "100% Right 0% Of the Time: Why the U.S. Military Can't Predict the Next War", *Foreign Policy*, October 16, 2012, accessed February 12, 2017, http://foreignpolicy.com/2012/10/16/100-right-0-of-the-time/.

[95] Philip Tetlock and Dan Gardner, *Superforecasting the Art and Science of Prediction* (New York: Crown Publishing Group, 2015), 186, iBooks.

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